AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. **(currently amended)** A power allocation method [[for]] of providing a packet data service with a line service in a mobile communication system having a base transceiver station (BTS) for performing wireless communication with a plurality of ~~at least one~~ mobile stations (MSs) ~~and a base station controller for controlling the base transceiver station~~, the method comprising the steps of:

(a) ~~checking~~ determining whether or not packet data traffic is generated for a first MS among said plurality of MSs;

(b) if it is determined in step (a) that ~~checked and~~ the packet data traffic is generated for the first MS, ~~in the step (a), checking~~ determining whether or not there is a second MS among said plurality of MSs that is currently using ~~the mobile station making use of~~ the line service with a call ~~where a current call is~~ being in progress;

(c) if it is determined in step (b) that the second MS is currently using ~~checked and there is the mobile station making use of~~ the line service ~~where the current call is~~ with the call being in progress, ~~checking~~ determining whether or not there is ~~the mobile station making use of the~~ packet data ~~service where the call is currently in progress~~ being transmitted during a current time slot; and

(d) if it is determined that the packet data traffic is generated for the first MS when ~~new packet data traffic is generated after it is checked that~~ there is no ~~mobile station making use of the~~ packet data ~~service where the current call is in progress~~ being transmitted during the current time

slot, gradually increasing ~~power transmitted~~, at each slot time during [[for]] a period of time, power allocated to the first MS for providing the packet data service to the first MS; ~~a mobile station which generates the new packet data traffic which it takes~~

wherein said method further comprises the step of calculating said period of time which is required for a signal-to-interference ratio (SIR) of the second MS ~~mobile station~~ to be restored to a SIR target ~~an original~~ value ~~thereof~~ when [[the]] power allocated to the second MS ~~mobile station making use of the line service~~ is changed due to the packet data service,

wherein said period of time is calculated from (i) the SIR target value, (ii) peak power of the BTS currently available for the packet data service, and (iii) the power currently allocated to the second MS during the current time slot, and

wherein the ~~increasing~~ power allocated to the first MS in step (d) is gradually increased toward said ~~in a remaining power other than a power allocated to the line service~~ peak power currently available for the packet data service.

2. (Original) The power allocation method as claimed in claim 1, wherein the packet data traffic in the step (a) is generated when the mobile station performs packet data communication including at least one of a wireless application protocol (WAP), a file transfer protocol (FTP) and a hypertext transfer protocol (HTTP).

3. **(currently amended)** The power allocation method as claimed in claim 1, further comprising the step of, if it is determined in step (b) ~~checked~~ that there is no MS currently using ~~mobile station making use of~~ the line service ~~where the current call is in progress in the step (b)~~, allocating the entire peak ~~current whole~~ power currently available for the packet data service to the first MS ~~mobile station making use of the packet data service~~.

4. **(currently amended)** The power allocation method as claimed in claim 1, further comprising the step of, if it is determined in the step (c) that ~~checked and~~ there is packet data being

transmitted during the current time slot while the second MS is currently using the line service with the call being in progress ~~the mobile station making use of the packet data service where the current call is in progress in the step (c)~~, allocating the entire peak ~~current whole~~ power currently available for the packet data service to the first MS ~~mobile station making use of the packet data service~~.

5. **(currently amended)** The power allocation method as claimed in claim 3, wherein ~~the step of allocating the power to the mobile station making use of the packet data service allocates current~~ the entire peak power currently available for the packet data service is allocated to the first MS ~~mobile station making use of the packet data service~~ at once.

6. **(currently amended)** The power allocation method as claimed in claim 4, wherein ~~the step of allocating the power to the mobile station making use of the packet data service allocates current~~ the entire peak power currently available for the packet data service is allocated to the first MS ~~mobile station making use of the packet data service~~ at once.

7-8. (Canceled)

9. **(currently amended)** The power allocation method as claimed in claim 1, wherein in step (d) the power allocated to the first MS is linearly increased ~~allocation gradually increases the power transmitted to the mobile station making use of the packet data service~~ by a same preset power magnitude at each said slot time.

10. **(currently amended)** The power allocation method as claimed in claim 1, wherein in step (d) the power allocated to the first MS is non-linearly increased during said ~~the power allocation controls the power transmitted to the mobile station making use of the packet data service to be gradually increased at each slot time in a way that an increasing width of each step is gradually decreased as the~~ period of time ~~proceeds~~.

11. **(currently amended)** The power allocation method as claimed in claim 9, wherein in step (d) the power allocated to the first MS is gradually ~~increasing power is~~ increased up to the peak power currently available for the packet data service ~~a peak power which can be currently transmitted~~.

12. (Original) The power allocation method as claimed in claim 10, wherein in step (d) the power allocated to the first MS is gradually ~~increasing power is~~ increased up to the peak power currently available for the packet data service ~~a peak power which can be currently transmitted~~.

13-32. (Canceled)

33. **(currently amended)** A power allocation apparatus for providing a packet data service with a line service ~~in a mobile communication system~~ over a mobile communication network in a mobile communication system having a base transceiver station (BTS) for performing wireless communication with a plurality of ~~at least one~~ mobile stations (MSs), and a base station controller (BSC) connected to a mobile switching center (MSC) and for controlling the BTS, ~~base transceiver station, the power allocation apparatus comprising:~~

the BTS comprising ~~base transceiver station including~~

an antenna for performing wireless communication with the MSs ~~mobile station~~;

a transmission section coupled to the antenna for performing wireless transmission by means of the antenna;

a reception section coupled to the antenna for performing wireless reception by means of the antenna;

a data reception section for receiving data to be transmitted from the mobile communication network to the MSs ~~mobile station~~;

a data processing section coupled to the data reception section for processing the data

received through the data reception section in accordance with a predetermined algorithm;

a modulation section coupled to the data processing section and the transmission section for modulating the data processed by the data processing section; and

a power section coupled to the transmission section for ~~supplying/driving~~ supplying driving power to the transmission section to allow the data modulated by the modulation section to be transmitted by the transmission section through the antenna; [[and]]

said power allocation apparatus comprising a control section for ~~checking whether or not there is the mobile station making use of the packet data service, and according to the checked result, controlling the power section to gradually regulate the power transmitted to the mobile station making use of the packet data service, wherein the gradually regulated power is in a remaining power other than a power allocated to the line service, and~~

~~if new packet data traffic is generated after it is checked that there is no mobile station making use of the packet data service where the current call is in progress, the control section controls the power section to gradually increase power transmitted at each slot time for a period of time to a mobile station which generates the new packet data traffic which it takes a signal to interference ratio of the mobile station to be restored to an original value thereof when the power allocated to the mobile station making use of the line service is changed~~

(a) determining whether or not packet data traffic is generated for a first MS among said plurality of MSs;

(b) if it is determined at (a) that the packet data traffic is generated for the first MS, determining whether or not there is a second MS among said plurality of MSs that is currently using the line service with a call being in progress;

(c) if it is determined at (b) that the second MS is currently using the line service with the call being in progress, determining whether or not there is packet data being transmitted during a current time slot; and

(d) if it is determined that the packet data traffic is generated for the first MS when there is no packet data being transmitted during the current time slot, controlling the power section to

gradually increase, at each slot time during a period of time, power allocated to the first MS for providing the packet data service to the first MS;

wherein said control section is further configured for calculating said period of time which is required for a signal-to-interference ratio (SIR) of the second MS to be restored to a SIR target value when power allocated to the second MS is changed due to the packet data service,

wherein said period of time is calculated from (i) the SIR target value, (ii) peak power of the BTS currently available for the packet data service, and (iii) the power currently allocated to the second MS during the current time slot, and

wherein said control section is further configured for controlling the power section to gradually increase the power allocated to the first MS at (d) toward said peak power currently available for the packet data service.

34. **(currently amended)** The power allocation apparatus as claimed in claim 33, wherein the control section resides in the BTS and is ~~provided to the base transceiver station~~ coupled to at least said power section.

35. **(currently amended)** The power allocation apparatus as claimed in claim 33, wherein the control section resides in the BSC ~~is provided to the base station controller~~.

36. (Original) The power allocation apparatus as claimed in claim 33, wherein the control section comprises:

a packet scheduler for receiving data transmitted from the mobile communication network to perform packet scheduling;

a channel estimator for estimating channels according to signals received through the reception section;

a channel allocator for allocating communication channels;

a power allocator for controlling the power section to allocate transmission power; and

a coding and modulating selector for performing coding and modulating of the data.

37. (Canceled)

38. **(currently amended)** The power allocation apparatus as claimed in claim 33, wherein the control section controls the power section to (e) allocate ~~current whole power to the mobile station making use of the packet data service, in the case where there is no mobile station making use of the line service where the current call is in progress when the packet data traffic is generated for the first time~~ the entire peak power currently available for the packet data service to the first MS if it is determined at (b) that there is no MS currently using the line service.

39. **(currently amended)** The power allocation apparatus as claimed in ~~claim 33~~ claim 38, wherein the control section controls the power section to (f) allocate ~~current whole power to the mobile station making use of the packet data service, in the case where there is the mobile station making use of the packet data service where the current call is in progress when the packet data traffic is generated for the first time~~ the entire peak power currently available for the packet data service to the first MS if it is determined at (c) that there is packet data being transmitted during the current time slot while the second MS is currently using the line service with the call being in progress.

40. **(currently amended)** The power allocation apparatus as claimed in claim 38 claim 39, wherein the control section controls the power section to allocate at (e) the entire peak ~~current remaining~~ power currently available for the packet data service to the first MS ~~mobile station making use of the packet data service~~ at once~~, in order to allocate the power to the mobile station making use of the packet data service~~.

41. **(currently amended)** The power allocation apparatus as claimed in ~~claim 39~~ claim

40, wherein the control section controls the power section to allocate at (f) the entire peak ~~current remaining~~ power currently available for the packet data service to the first MS ~~mobile station making use of the packet data service~~ at once~~, in order to allocate the power to the mobile station making use of the packet data service~~.

42-44. (Canceled)

45. **(currently amended)** The power allocation apparatus as claimed in claim 33, wherein the control section controls the power section at (d) to gradually non-linearly increase the power allocated to the first MS during ~~transmitted to the mobile station making use of the packet data service at each slot time in a way that an increasing width of each step is gradually decreased as~~ the ~~preset~~ period of time ~~proceeds~~.

46. **(currently amended)** The power allocation apparatus as claimed in claim 45, wherein the control section controls the power section at (d) to gradually exponentially increase the power allocated to the first MS during ~~to cause the increasing width to be gradually decreased as~~ the period of time ~~proceeds so as for the power transmitted to the mobile station making use of the packet data service to increase in exponential proportion~~.

47. **(currently amended)** The power allocation apparatus as claimed in claim 33, wherein the control section controls the power section at (d) to cause the gradually increasing power allocated to the first MS to be increased up to ~~a peak power which can be currently transmitted~~ the peak power currently available for the packet data service.

48. (Canceled)

49. **(new)** The power allocation method as claimed in claim 1, wherein a number n of

the time slots in the period of time is calculated as follows:

$$n_i = \log_{\Delta}\left[1 + \frac{\delta\Gamma}{1+\delta\Gamma} \cdot \frac{P_{Full} - P_{OH} - P_{PC}(t)}{P_i(t)}\right]$$

$$n =^{def} \lceil n_{avg} \rceil$$

where

i is the index indicating a particular MS,

Δ is the constant representing orthogonality,

Γ is the SIR target value,

P_{Full} is the peak power available at the BTS,

P_{OH} is the power allocated to an overhead channel,

$P_{PC}(t)$ is the power allocated to the line service at the current slot time t,

$P_i(t)$ is the power allocated to the i^{th} MS at the current slot time t, and

n_{avg} is the average of all values n_i of all MSs.